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6 **IN THE UNITED STATES DISTRICT COURT**
7 **FOR THE DISTRICT OF ARIZONA**

8
9 Center for Biological Diversity, et al.,
10 Plaintiffs,
11 v.
12 Deb Haaland, et al.,
13 Defendants.
14

No. CV-22-00303-TUC-SHR(L)
No. CV-22-00453-TUC-SHR(C)

**Order Re: Motions for
Summary Judgment**

15
16 Pending before the Court are: (1) Plaintiffs Center for Biological Diversity and
17 Defenders of Wildlife's (collectively, "Lead Plaintiffs") Motion for Summary Judgment
18 (Docs. 55, 56), (2) Plaintiffs Grand Canyon Wolf Recovery Project, New Mexico
19 Wilderness Association, Western Watersheds Project, WildEarth Guardians, and
20 Wildlands Network's (collectively, "Consolidated Plaintiffs") Motion for Summary
21 Judgment (Docs. 58, 59), (3) Defendants Deb Haaland and United States Fish and Wildlife
22 Service's (collectively, "Lead Defendants") Cross-Motion for Summary Judgment (Docs.
23 63, 64), (4) Defendants Deb Haaland, United States Department of the Interior, United
24 States Fish and Wildlife Service, and Martha Williams' (collectively, "Consolidated
25 Defendants") Cross-Motion for Summary Judgment (Docs. 77, 78); (5) Intervenor-
26 Defendant State of Arizona's Cross-Motion for Summary Judgment in the Lead Case
27 (Docs. 67, 68), (6) Intervenor-Defendant State of Arizona's Cross-Motion for Summary
28 Judgment in the Consolidated Case (Docs. 81, 79), and (7) Plaintiffs' Motion for Judicial

1 Notice (Doc. 86). The motions for summary judgment have been fully briefed, and amicus
 2 curiae has filed a brief in support of Federal Defendants in both cases (Doc. 76). The Court
 3 held oral argument on March 5, 2025. (See Doc. 102.) For the reasons below, the Court
 4 denies Plaintiffs' Motions for Summary Judgment (Docs. 55, 58) and grants Defendants'
 5 Cross-Motions for Summary Judgment (Docs. 63, 67, 77, 81).

6 **I. Factual and Procedural Background¹**

7 Plaintiffs challenge a rule the United States Fish and Wildlife Service (FWS)
 8 promulgated to conserve the Mexican gray wolf ("Mexican wolf") in response to a remand
 9 regarding a prior version of the rule in this District. *See generally Ctr. for Biological*
 10 *Diversity v. Jewell*, No. CV-15-00019, 2018 WL 1586651 (D. Ariz. Mar. 31, 2018) (the
 11 "2018 Remand Order").

12 **a. The Mexican Wolf**

13 The Mexican wolf "is the rarest, southern-most occurring, and most genetically
 14 distinct subspecies of all the North American gray wolves." (FWS029324; *see also*
 15 FWS027771.) Historically, Mexican wolves inhabited portions of the southwestern United
 16 States and central and northern Mexico. (FWS032661; FWS030063; FWS029324;
 17 FWS029965–66.) Although once comprised of thousands of wolves, the Mexican wolf
 18 population declined rapidly in the first half of the 20th century due to "Federal, state, and
 19 private predator control and eradication efforts." (FWS029324; *see also* FWS029480.) By
 20 the early 1970s, the species was considered extinct. (FWS029324.) As a result, FWS listed
 21 the species, then a subspecies of the entire gray wolf species, as endangered under the
 22 Endangered Species Act (ESA) in 1976. (FWS029322.) From 1980 until FWS began its
 23 reintroduction project in 1998, no wild Mexican wolf populations were known to exist in
 24 either the United States or Mexico. (FWS029324.) FWS captured the last Mexican wolves
 25 from the wild in Mexico between 1977 and 1980, and these seven wolves became the

27 ¹ This background section references the undisputed facts contained within the
 28 administrative record. References to the administrative record use the Bates numbers as
 designated by the parties. The Court has taken all statements of fact and controverting
 statements of fact (Docs. 57, 65, 66, 69, 80, 88, 90, 91) into account when determining
 which facts are material.

1 founding members of a captive breeding program established to rescue the subspecies.
 2 (FWS029967.) This program prevented the subspecies' extinction and ultimately provided
 3 Mexican wolves for reintroduction into the wild. (*Id.*)

4 **b. The Reintroduction Program & Recent Status**

5 In 1982, FWS published its first Mexican Wolf Recovery Plan. (See FWS036437–
 6 542.) The Plan's objective was to reestablish a viable, self-sustaining population of at least
 7 100 Mexican wolves in the wild. (FWS036461.) Accordingly, in 1998, FWS released 11
 8 Mexican wolves, bred and reared in captivity, into an area called the Blue Range Wolf
 9 Recovery Area (BRWRA). (FWS029327; FWS029966.) FWS released these wolves
 10 under ESA Section 10(j)'s experimental population provision, which modifies the ESA's
 11 otherwise applicable prohibitions to facilitate reintroductions. (See FWS029053.) At the
 12 same time, FWS promulgated a rule determining that all released wolves would be deemed
 13 "nonessential." (FWS029054.)

14 Since 1998, FWS has released more Mexican wolves into the BRWRA.
 15 (FWS029334–35; FWS027769.) As a result, by the end of 2021, a minimum of 196 wild
 16 wolves inhabited what is called the Mexican Wolf Experimental Population Area
 17 (MWEPA), encompassing the states of Arizona and New Mexico south of Interstate 40 (I–
 18 40). (FWS032662–63.) While FWS was managing the reintroduction in the United States,
 19 a similar program began in Mexico in 2011. (FWS032664; FWS029336.) As a result,
 20 around 45 Mexican wolves inhabited a portion of the Sierra Madre Occidental in northern
 21 Mexico as of 2022. (FWS032664.)

22 **i. *Genetics***

23 Unfortunately, "Mexican wolves have pronounced genetic challenges" due to "the
 24 small number of founders upon which the captive population was established" and "the
 25 near extirpation" in the wild. (FWS029979–80.) "These challenges include inbreeding
 26 (mating of close relatives), loss of heterozygosity (a decrease in the proportion of
 27 individuals in a population that have two different alleles for a specific gene), and loss of
 28 adaptive potential, three distinct but interrelated phenomena." (FWS029980.) Although

1 “[i]nbreeding can occur in any population,” it “is most likely to occur in small populations
 2 due to limited choice of mates.” (*Id.*) To mitigate these genetic challenges, FWS takes
 3 various measures, including strategically releasing captive wolves and cross-fostering
 4 captive-born pups in the wild. (FWS038508; FWS32004; FWS038752.)

5 As of 2021, the captive population had maintained 82.49% of the gene diversity of
 6 its founders. (FWS035324.) This percentage is “lower than the recommended retention
 7 of 90% for most captive breeding programs.” (FWS038065.) The 1994 master plan
 8 recovery goal was set to “retain 75% gene diversity for a period of 50 years with a managed
 9 population of 250 wolves.” (FWS035333.) With the current gene diversity of 82.49% and
 10 current space limitations of 300 captive wolves, “retaining 75% gene diversity for 60 years
 11 from present is possible.” (*Id.*) Additionally, as of 2021, the wild population retained
 12 76.23% of the founders’ gene diversity. (FWS035334.)

13 These percentages reflect many underlying genetic metrics FWS actively studies in
 14 the Mexican wolf population. For example, FWS measures the “founder genome
 15 equivalent” (FGE), which is “the number [of] wild-caught individuals (founders) that
 16 would produce the same amount of gene diversity as does the population under study.”
 17 (FWS035402.) FWS also measures the “mean kinship,” which describes how related the
 18 wolves are on average. (FWS038067.) From 2017 to 2021, the U.S. wild population’s
 19 mean kinship went down, meaning the wolves were becoming less related to each other.
 20 (FWS035334, 035403.)

21 ***ii. Feeding Program***

22 Since 2009, FWS has managed a supplemental/diversionary feeding program,
 23 meaning it provides food caches to wild Mexican wolves. (FWS038058, 038064;
 24 FWS027979–80.) Supplemental feeding serves to boost survival with extra nutrition, and
 25 diversionary feeding helps divert wolves from livestock. (FWS038058, 038064.) In 2017,
 26 FWS explained “[d]iversionary food caches have been used on increasing proportions of
 27 the population since 2009, providing about 10 pounds of meat per wolf every two to three
 28 days sometimes for several months when the likelihood of depredations [is] high (e.g.,

1 during denning season).” (FWS038064.) The level of feeding changes based on the needs
2 of the population. For instance, in 2016 and 2017, FWS “provided diversionary feeding
3 for approximately 70% of the breeding pairs during denning season.” (*Id.*; *see also*
4 FWS038103.) These feeding programs have increased average litter sizes, lowered rates
5 of mortality, and decreased removals from the wild. (FWS038100; FWS038160;
6 FWS038064; FWS030358.)

7 ***iii. Removals***

8 Between 1998 and 2019, FWS authorized or carried out the removals of 206
9 Mexican wolves from the reintroduced population. (FWS027936.) Many removals were
10 temporary or involved relocations of wolves within the MWEPA area. (FWS039145;
11 FWS023512; FWS037204, 037267–68.) The number of removals has decreased since
12 2009 with the discontinuation of Standard Operating Procedure 13, which prescribed
13 removal of wolves that had been involved in 3 incidents within 365 days, in response to
14 removal rates FWS considered “too high to allow recovery.” (FWS037204, 037210.)
15 Although some removals have included genetically valuable individuals (*see* N043404),
16 “[m]any considerations are taken into account when determining whether to remove
17 wolves, including the status of the population and the genetics of individual wolves.”
18 (FWS038071.)

19 ***iv. Geographic Boundaries***

20 When the first 11 wolves were released in 1998, FWS restricted them to the
21 BRWRA. (FWS029286; FWS029327.) However, in 2015, FWS expanded the area
22 Mexican wolves would be permitted to occupy to include all of the area south of I-40 in
23 Arizona and New Mexico, i.e., the MWEPA. (FWS033836–37.) When wolves leave this
24 area and are discovered, FWS captures and returns them to the MWEPA or places them in
25 captivity. (FWS032665.) Although a prior habitat-suitability assessment identified two
26 areas of suitable habitat north of I-40 (FWS029360–62), FWS relied on a newer habitat-
27 suitability assessment, Martinez-Meyer (2017), in maintaining its I-40 boundary for the
28 MWEPA, (FWS027958.)

1 c. **2015 10(j) Rule & Ensuing Litigation**

2 In 2013, FWS began the process of revising the Section 10(j) Rule for the MWEPA
3 population. (See FWS029989–90.) Between 2009 and 2013, the MWEPA population
4 nearly doubled in size (FWS039145), so the revision was intended, in part, to expand the
5 MWEPA area to allow for further growth of the wild population. (FWS030016.)
6 Accordingly, FWS increased the population objective from 100 wolves to between 300 and
7 325 wolves in the 2015 10(j) Rule. (FWS030024.) While crafting this rule, FWS consulted
8 many stakeholders, including the Arizona Game and Fish Department (AZGFD), regarding
9 this objective and other aspects of the rule. (See FWS029991–92.) FWS estimated when
10 the revised population objective is met, “the population will have a 90 percent likelihood
11 of persistence over 100 years.” (FWS032661.)

12 In addition to the population objective increase, the 2015 10(j) Rule included other
13 changes. For example, as to the number of “effective migrants” from the captive
14 population into the wild population contemplated by the 2015 10(j) Rule, FWS
15 “recommend[ed] a . . . minimum of 1 to 2 effective migrants per generation entering the
16 population, depending on its size, over the long term” but noted “[i]n the more immediate
17 future, [FWS] may conduct additional releases in excess of 1–2 effective migrants per
18 generation to address the high degree of relatedness of wolves in the [MWEPA
19 population].” (FWS029993.)

20 Additionally, FWS clarified the legal “take” provisions to provide greater
21 management flexibility, make reintroduction compatible with human activities like
22 livestock grazing and hunting, and permit take in response to unacceptable impacts from
23 predation on wild ungulate herds. (FWS029993, 029995; FWS030000; FWS029827; *see*
24 *also* N001500, N001514; N048579.) The take provision related to predation on wild
25 ungulate herds was incorporated at least in part because Arizona requested it. (See
26 N001500, N001514; *see also* N048579.) The 2015 10(j) Rule’s take provisions would
27 allow various entities to remove Mexican wolves under certain conditions. None of the
28 2015 10(j) Rule’s expanded taking authorizations included any safeguards to prevent

1 removal of genetically valuable wolves needed to rehabilitate the gene diversity of the wild
 2 population. (FWS033878–80.) Despite these changes, FWS did not revisit “the issue of
 3 whether or not the experimental population is essential to survival of the species in the
 4 wild,” and noted “nothing in the rule change[d] the designation of the population.”
 5 (FWS030026.)

6 After a group of plaintiffs challenged the 2015 10(j) Rule, a judge in this District
 7 ruled in 2018 the 2015 10(j) Rule “fails to further recovery” of the Mexican wolf, primarily
 8 “by failing to provide for the population’s genetic health” in the long term, and therefore
 9 violates the ESA. *Jewell*, 2018 WL 1586651, at *13, 17. Furthermore, the court
 10 determined FWS could not continue to rely on its 1998 “nonessential” determination for
 11 the experimental population but must instead make a new essentiality determination. *Id.*
 12 at *19. As a result, the court remanded the 2015 10(j) Rule to FWS to correct these errors
 13 but allowed the Rule to remain in effect during the remand period. *Id.* at *23.

14 **d. The 2017 Recovery Plan & 2022 10(j) Rule²**

15 In late 2015, as the litigation regarding the 2015 10(j) Rule was ongoing, FWS
 16 initiated a new recovery planning process, which involved input from various stakeholders,
 17 including scientists and the states of Arizona, New Mexico, Colorado, and Utah.
 18 (FWS004517–18; FWS004627–28.) This process culminated in the 2017 Recovery Plan,
 19 which included the following delisting criteria³ for the Mexican wolf: (1) the U.S.
 20 population averages at least 320 wolves and the Mexico population averages at least 200
 21 wolves over eight years, and each is stable or increasing; (2) the captive breeding program
 22 releases a sufficient number of captive wolves into the wild, resulting in at least 22 released
 23 wolves in the U.S. and 37 released wolves in Mexico surviving to “breeding age”—
 24 regardless of whether they actually breed; and (3) adequate state, Tribal, and Mexican
 25 regulations are in place to limit human-caused mortality. (FWS030480–82, 030500–02.)

26 Leading up to the rulemaking at issue, conservation biologists were split on the
 27

28 ² The 2017 Recovery Plan and the 2022 10(j) Rule are largely interconnected.

³ FWS uses delisting criteria to determine whether threats to a listed species have been eliminated or controlled.

1 recovery strategy FWS should implement. This split began in 2010, when certain scientists
 2 on the Mexican wolf recovery team recommended establishing a metapopulation
 3 consisting of three wild populations in the United States in a draft recovery plan.
 4 (FWS038598–99.) This plan would require expanding the MWEPA north of the I-40. (See
 5 *id.*) FWS did not adopt this recommendation. Instead, in crafting the 2017 Recovery Plan,
 6 FWS used more current and comprehensive modeling and other data indicating recovery
 7 of the Mexican wolf is possible through a binational recovery strategy involving the
 8 MWEPA population and a wild population in Mexico. (FWS030480–82; FWS038598–
 9 99; FWS032673.) This modeling data arose from a population viability analysis (PVA)
 10 performed by Dr. Phillip Miller, in collaboration with FWS and with input from the
 11 participants in the recovery planning workshops (the “Miller PVA”). (FWS030486,
 12 030502–06; FWS038096; *see also, e.g.*, FWS011320; FWS006018, FWS006019–100.)

13 Population viability models provide a way to investigate “current and future
 14 demographic dynamics of Mexican wolf populations.” (FWS034826.) In a PVA analysis,
 15 “[t]he need for and consequences of alternative management strategies can be modeled to
 16 suggest which practices may be the most effective in managing Mexican wolf populations.”
 17 (*Id.*) The Miller PVA used a computer program called *Vortex* to simulate future Mexican
 18 wolf population dynamics in the MWEPA and in Mexico based on a set of assumptions.
 19 (FWS038096–97.) *Vortex* has been shown to produce predicted population abundance
 20 trajectories consistent with monitored wildlife populations and other similar software
 21 platforms. (FWS034826.) While previous Mexican wolf modeling by Drs. Richard
 22 Fredrickson and Carlos Carroll relied on data from other wolf subspecies, such as wolves
 23 in the Greater Yellowstone Area, the Miller PVA gathered most of its data through direct
 24 observation of the Mexican wolf subspecies. (FWS034825.) In addition, the PVA
 25 included a “captive population component to the metapopulation model,” which allowed
 26 Dr. Miller to incorporate the pedigree of all living wild and captive Mexican wolves. (*Id.*)

27 After starting with a baseline of pedigree information for the existing populations,
 28 the *Vortex* program simulated an annual series of life-cycle events (e.g., reproduction and

1 death) and management actions (e.g., removals, translocations, and captive releases) to
2 project what could happen to those populations in subsequent years. (FWS038097–98,
3 FWS038104, FWS038107–11.) In doing so, the Miller PVA used assumptions for
4 parameters such as mortality rates, birth rates, and litter size. (FWS038097–98,
5 FWS038104.) In identifying appropriate values for these parameters, Dr. Miller cited the
6 results of field studies of the MWEPA population, as well as literature and modeling by
7 Drs. Fredrickson and Carroll and other wolf researchers. (FWS034827–32.) The
8 assumptions used in the PVA were largely drawn from historic data from the MWEPA
9 population, as well as the status of the captive population and the wild population in
10 Mexico. (FWS034826–27.) Based on these assumptions, the PVA generated estimates of
11 the wild population’s likelihood of extinction and its level of gene diversity after 100 years,
12 as well as its level of gene diversity compared to the gene diversity retained by the captive
13 population after 100 years. (See FWS034864–65.)

14 The Miller PVA used the same removal/mortality rate for both fed and unfed wolves
15 even though participants in the recovery planning workshops agreed the model should
16 incorporate higher mortality/removal rates for unfed wolves than fed wolves.
17 (FWS005318.) The participants in recovery planning workshops never arrived at a
18 consensus as to what rate of mortality/removal would be appropriate. (*Id.*) Thus, Dr.
19 Miller performed further test runs of the model that changed these and other parameters,
20 reporting “fairly dramatic” results. (FWS005319.) The final model resolved this by
21 lowering the overall mortality rate.

22 In addition to the Miller PVA, FWS relied on the 2017 Martinez-Meyer habitat-
23 suitability assessment to support its choice to rely on Mexico for the second Mexican wolf
24 population needed for long-term recovery. (FWS030486, FWS030493, FWS030506;
25 FWS038170.)

26 Following these years of research and in response to the 2018 remand from this
27 District, FWS proposed a Revised 10(j) management rule (the “Proposed Revised 10(j)
28 Rule”) in October 2021. (FWS022296.) FWS drew the substance of the Proposed Revised

1 10(j) Rule primarily from the 2017 Recovery Plan. FWS solicited comments from the
 2 public, adjusted parts of the Rule based on comments, and responded to those comments.
 3 Then, on July 1, 2022, FWS promulgated the Final Revised 10(j) Rule (the “2022 10(j)
 4 Rule”). (FWS032660–85.)

5 The Revised Rule included a new population objective, a new genetic objective, and
 6 new temporary restrictions on the use of three take provisions but maintained the
 7 experimental population’s geographic boundary (the MWEPA/south of I-40) and
 8 determined the experimental population was still nonessential. (See generally
 9 FWS032660–85.) First, the population objective set a broad goal “to achieve and sustain
 10 a population average greater than or equal to 320 wolves in Arizona and New Mexico.”
 11 (FWS032661.) Specifically, this objective “must be achieved over an 8-year period” as
 12 follows: “the population must exceed 320 Mexican wolves each of the last 3 years of the
 13 8-year period, and the annual population growth rate averaged over the 8-year period must
 14 demonstrate a stable or increasing population, as calculated by a geometric mean.” (*Id.*)
 15 Second, the genetic objective targeted enough captive wolf releases into the wild
 16 population to result in at least 22 released wolves surviving to breeding age.
 17 (FWS032662.) This objective did not account for direct genetic measuring or whether any
 18 of those released wolves actually breed. (See *id.*) Third, the Rule “temporarily restrict[ed]
 19 the use of three take provisions from the 2015 10(j) rule: take on Federal land, take on non-
 20 Federal land in conjunction with a removal action, and take in response to an unacceptable
 21 impact to a wild ungulate herd.” (*Id.*) Specifically, FWS would issue no take permits for
 22 unacceptable impacts on a wild ungulate herd until the genetic objective had been met and
 23 issue no permits under the other two take provisions unless annual benchmarks of progress
 24 toward the genetic objective were met or takings the previous year did not include the lethal
 25 taking of any released wolf that would have counted toward the genetic objective.
 26 (FWS022305.) FWS expected to meet the genetic objective by 2030. (FWS022302;
 27 FWS022304.)

28 After conducting a “fresh essentiality determination” as required by the remand,

1 FWS maintained the experimental population’s nonessential designation, primarily relying
2 on two factors. (FWS032664; *see also* FWS022310.) The first factor FWS considered
3 was the “existence of a protected wild population [in Mexico] outside of the MWEPA.”
4 (FWS032664; *see also* FWS022311.) The second factor FWS considered was the captive
5 breeding program and its ability to replace the entire wild population if lost. (See
6 FWS032665.) FWS determined animals from captivity would be available for
7 reintroduction to the wild to reestablish the population, noting “the captive population is
8 more capable of producing genetically redundant wolves for release than it was in 1998,
9 due to its increased size.” (FWS022310; *see also* FWS032665.) FWS noted it had “the
10 knowledge and logistical capability to re-start the population and manage it to contribute
11 to the long-term conservation and recovery of the Mexican wolf.” (FWS032664.) Lastly,
12 FWS explored the hypothetical release scenarios assuming a loss, noting it would “seek to
13 establish a base of released wolves representative of the gene diversity available in
14 captivity.” (FWS032664–65.) After considering these factors and determining the loss of
15 all reintroduced Mexican wolves within the MWEPA is not likely to appreciably reduce
16 the likelihood of survival of the subspecies in the wild, FWS determined this experimental
17 population was nonessential.

18 **e. Supplemental Environmental Impact Statement**

19 In May 2022, FWS published the final version of its Supplemental Environmental
20 Impact Statement (“SEIS”) for the 2022 10(j) Rule. (See FWS027756–996.) In the SEIS,
21 FWS stated the purpose of the proposed action, i.e., promulgation of a revised 10(j) Rule,
22 was “to ensure compliance with” the 2018 remand from this District. (FWS027758.)
23 Furthermore, FWS stated the action was necessary “because the ruling directs” FWS to
24 redress certain narrowly defined issues—“the population size and genetic needs required
25 for long-term persistence of the Mexican wolf,” “the relationship between expanded take
26 of Mexican wolves and protecting against the loss of genetic diversity,” and “a fresh
27 essentiality determination”—as they pertain to ensuring “the experimental population
28 provides for the long-term conservation and recovery of the Mexican wolf.” (*Id.*) The

1 2022 SEIS supplemented the prior 2014 EIS and incorporated the 2014 EIS by reference
 2 where appropriate. (*Id.*) While comments on the Draft SEIS asserted FWS should take a
 3 “hard look” at the nonessential determination by analyzing the effects of an essential
 4 determination (FWS024897), the SEIS did not include an analysis of the environmental
 5 impacts related to the essentiality determination, noting the revised rule would include an
 6 essentiality analysis. (FWS027758.)

7 In the SEIS, FWS described five components of the 2015 10(j) Rule it would change
 8 with its new rule: (1) “the population objective for the number of Mexican wolves in the
 9 MWEPA,” (2) “the number of releases of captive wolves into the MWEPA,” (3) “the
 10 provision for take on non-Federal lands in the MWEPA,” (4) “the provision for take on
 11 Federal land in the MWEPA,” and (5) “the provision for take in response to unacceptable
 12 impacts to a wild ungulate herd in the MWEPA.” (FWS027758–59.) The SEIS analyzed
 13 three alternatives in detail, each of which changed at least one of these components.
 14 (FWS027759–61.) The SEIS also considered several alternatives but eliminated them from
 15 detailed consideration. (FWS027774–78.) For example, FWS eliminated an “[a]lternative
 16 that includes no take/removal provision for wolf dispersal across any specific boundary, in
 17 particular dispersal and inhabitance north of I-40.” (FWS027776.) FWS “eliminated this
 18 alternative from further consideration because it does not promote flexibility in the
 19 management of Mexican wolves in the MWEPA” and “it is outside the scope of revisions
 20 necessary to respond to” the 2018 Remand Order. (*Id.*)

21 **II. Standard of Review Under the Administrative Procedure Act (APA)**

22 Summary judgment is a particularly appropriate tool for resolving claims
 23 challenging agency actions, i.e., “deciding the legal question of whether the agency could
 24 reasonably have found the facts as it did.” *Occidental Eng’g Co. v. INS*, 753 F.2d 766, 770
 25 (9th Cir. 1985); *see also Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1017 (9th
 26 Cir. 2012) (en banc). Therefore, instead of performing traditional review of summary
 27 judgment motions under *Celotex Corp. v. Catrett*, 477 U.S. 317 (1986), and Federal Rule
 28 of Civil Procedure 56, judicial review of an agency action under the ESA and the National

1 Environmental Policy Act (NEPA) at the motion for summary judgment stage proceeds
 2 under the APA. *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 601 (9th
 3 Cir. 2014); *see also* 5 U.S.C. § 701 *et. seq.*

4 The APA directs courts to “hold unlawful and set aside agency action, findings, and
 5 conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not
 6 in accordance with law.” 5 U.S.C. § 706(2)(A). “This standard of review is highly
 7 deferential, presuming the agency action to be valid and affirming the agency action if a
 8 reasonable basis exists for its decision.” *Nw. Ecosystem All. v. U.S. Fish & Wildlife Serv.*,
 9 475 F.3d 1136, 1140 (9th Cir. 2007) (citation and internal quotation marks omitted). Even
 10 if the record reflects an agency has made mistakes, the challenging party bears the burden
 11 of persuasion, meaning it must demonstrate the agency’s conclusions are unreasonable.
 12 *Ctr. for Cnty. Action & Env’t Just. v. FAA*, 18 F.4th 592, 599 (9th Cir. 2021). Accordingly,
 13 the Court should only overturn agency action when the challenging party meets its burden
 14 and shows the action:

15 relied on factors which Congress has not intended it to consider, entirely
 16 failed to consider an important aspect of the problem, offered an explanation
 17 for its decision that runs counter to the evidence before the agency, or is so
 18 implausible that it could not be ascribed to a difference in view or the product
 of agency expertise.

19 *Pac. Coast Fed’n of Fishermen’s Ass’n, Inc. v. Nat’l Marine Fisheries Serv.*, 265 F.3d
 20 1028, 1034 (9th Cir. 2001) (quoting *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm
 21 Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). Ultimately, courts must “ensure that the
 22 agency considered the relevant factors and articulated a rational connection between the
 23 facts found and the choices made.” *Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d
 24 1015, 1023 (9th Cir. 2011) (quoting *Nw. Ecosystem All.*, 475 F.3d at 1140).

25 **III. Relevant Law**

26 **a. The Endangered Species Act (ESA)**

27 Congress enacted the ESA “to provide a program for the conservation
 28 of . . . endangered species.” 16 U.S.C. § 1531(b). Accordingly, the ESA’s provisions

1 require “all Federal departments and agencies” to “seek to conserve endangered species”
 2 and “utilize their authorities in furtherance of the purposes of” the ESA. § 1531(c)(1). One
 3 way of doing this is, under Section 10(j)⁴ of the ESA, FWS can reintroduce experimental
 4 populations if they “will further the conservation of [the] species.” 16 U.S.C.
 5 § 1539(j)(2)(A). When FWS uses its power under Section 10(j) to reintroduce
 6 experimental populations, each member of the population generally “shall be treated as a
 7 threatened species,” § 1539(j)(2)(C), which makes them subject to “such regulations as
 8 [FWS] deems necessary and advisable to provide for the conservation of such species,” 16
 9 U.S.C. § 1533(d). Thus, any regulations issued to manage experimental populations under
 10 Section 10(j) must generally aim to provide for the conservation of the species. *Cf. Sierra*
 11 *Club v. Clark*, 755 F.2d 608, 612–13 (8th Cir. 1985) (noting the extent of the Secretary of
 12 the Interior’s discretion under another section of the ESA is limited because “the
 13 regulations . . . must provide for the conservation of threatened species”).

14 “Before authorizing the release of any” experimental population, the Secretary must
 15 “determine, on the basis of the best available information, whether or not such population
 16 is essential to the continued existence of an endangered species or a threatened species.”
 17 16 U.S.C. § 1539(j)(2)(B). Therefore, any 10(j) rule must provide “[a] finding, based
 18 solely on the best scientific and commercial data available, and the supporting factual basis,
 19 on whether the experimental population is, or is not, essential to the continued existence of
 20 the species in the wild.” 50 C.F.R. § 17.81(c)(2) (2022).⁵ An “essential experimental
 21 population” is one “whose loss would be likely to appreciably reduce the likelihood of the
 22 survival of the species in the wild.” 50 C.F.R. § 17.80(b). “All other experimental
 23 populations are to be classified as nonessential.” *Id.*

24 **b. National Environmental Policy Act (NEPA)**

25 NEPA “promotes its sweeping commitment to ‘prevent or eliminate damage to the
 26 environment . . .’ by focusing Government and public attention on the environmental

27
 28 ⁴ 16 U.S.C. § 1539(j).

⁵ Because the regulations in effect at the time of the rulemaking govern, the Court
 will refer to regulations in effect in 2022 throughout but will not include the year.

1 effects of proposed agency action.” *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 371
 2 (1989) (quoting 42 U.S.C. § 4321). When an agency proposes an action to address a need,
 3 the NEPA process begins and the agency must determine which level of NEPA review it
 4 will pursue: an Environmental Impact Statement (EIS), an Environmental Assessment
 5 (EA), or a categorical exclusion (CE). *See* 40 C.F.R. § 1501.4. Under NEPA, agencies are
 6 required to prepare an EIS for any proposed federal action “significantly affecting the
 7 quality of the human environment.” 42 U.S.C. § 4332(2)(C). An EIS must address, among
 8 other things, the environmental effects—direct, indirect, and cumulative—of the proposed
 9 action. *See Russell Country Sportsmen v. U.S. Forest Serv.*, 668 F.3d 1037, 1045 (9th Cir.
 10 2011).

11 **IV. Discussion**

12 Plaintiffs argue FWS violated the ESA and NEPA. The Court will first address
 13 Plaintiffs’ arguments under the ESA and then their arguments under NEPA.⁶

14 **a. The Endangered Species Act (ESA)**

15 Lead Plaintiffs identify various arbitrary actions taken by FWS in violation of the
 16 ESA’s recovery mandate, which generally fall into four categories: FWS’s reliance on the
 17 Miller PVA and its allegedly flawed assumptions, FWS’s use of a genetic surrogate/proxy,
 18 conditioning the take provisions on the genetic measure, and setting the upper I-40
 19 boundary. (Doc. 56 at 22.) Additionally, Consolidated Plaintiffs contend FWS’s
 20 nonessential determination violates the ESA. (Doc. 59 at 22–43.) The Court will address
 21 Lead Plaintiffs’ ESA challenges to the modeling underlying and objectives of the 2022
 22 10(j) Rule in Section IV(a)(i)–(iv) and will address Consolidated Plaintiffs’ ESA challenge
 23 to the nonessential determination in Section IV(a)(v).

24 **i. The Miller PVA**

25 **1. FWS’s Reliance On The Miller PVA & Its Assumptions**

26 First, Plaintiffs contend FWS arbitrarily relied on a model that incorporated

27 ⁶ Intervenor-Defendant Arizona has filed cross-motions for summary judgment in
 28 both cases. However, these cross-motions overlap substantially with arguments of Federal
 Defendants in both cases. Therefore, the Court will focus its discussion on the other
 motions unless it finds an analytical reason to explicitly mention Arizona’s arguments.

1 irrational assumptions and underestimated extinction risk and genetic loss. The Miller
2 PVA's scenario upon which the 2022 10(j) Rule was based relied on the assumption that
3 feeding rates would gradually decline from 70% of packs being fed to 15%, and then
4 remain at 15% for the remainder of the 100-year simulation. This scenario used a mortality
5 rate of 24.9%, which FWS deemed conservative given the documented mortality rate.
6 (Doc. 64 at 24; *see also* FWS034865; FWS027982.) From 2009 to 2015, the mortality rate
7 was 18.9%, and, in recent years, the MWEPA population has maintained a mortality rate
8 below this level. For example, the mortality rate was 11.7% in 2019, 21% in 2020, and
9 18% in 2021. (FWS038778, FWS038835, FWS039128.) However, participants in the
10 recovery planning process and commenters noted the model should incorporate higher
11 mortality/removal rates for unfed wolves than fed wolves. (FWS005318.) Recovery
12 workshop notes reflect this general agreement but noted the group “did not agree on how
13 much.” (*Id.*) Ultimately, the Miller PVA did not incorporate different mortality/removal
14 rates for fed versus unfed wolves, as participants suggested it should.

15 However, in response to these concerns raised during recovery workshops, Dr.
16 Miller modeled another set of scenarios in which diversionary feeding was eliminated
17 entirely and included these analyses as an addendum to the PVA. (FWS038657; *see also*
18 FWS034871–76.) Dr. Miller noted, in these model simulations, the MWEPA population
19 would not achieve its recovery goals in the absence of diversionary feeding *if all other*
20 *model assumptions from the primary scenario remained the same.* (See FWS034873–75.)
21 Therefore, Dr. Miller next explored whether other model metrics could be changed to
22 sustain viable populations without diversionary feeding. (FWS034874–75.) Dr. Miller
23 found FWS could achieve long-term demographic stability and its genetic diversity target
24 when the annual adult mortality rate was reduced from 24.9% to 20.9%. (FWS034875.)
25 These results “indicate that populations can remain viable in the absence of diversionary
26 feeding with reduced wolf mortality” (FWS038654.)

27 Plaintiffs argue the modeled mortality rate of 20.9%, assuming no diversionary
28 feeding, is unreasonable and reduced diversionary feeding will result in a spike in mortality

1 rates. (Doc. 56 at 26–27.) Yet Plaintiffs point to no scientific evidence establishing a
 2 consensus on the impact of diversionary feeding on mortality rates to support their claim
 3 that Dr. Miller’s assumption of a mortality rate of 20.9% with no diversionary feeding in
 4 an alternate scenario under the model was unreasonable. Instead, they generally argue
 5 there could be some impact of an undisclosed magnitude based on their review of the
 6 mortality rates during years of increased diversionary feeding. The Court declines
 7 Plaintiffs’ invitation to find arbitrary and capricious FWS’s decision to not *arbitrarily* set
 8 some unknown differential mortality rate for unfed versus fed wolves in one modeled
 9 scenario. The Court finds FWS’s reliance on the modeled scenario and its management
 10 tools much more reasonable, and far surpassing the standards of the APA, than if it had
 11 relied on an arbitrary measure for fed versus unfed wolves in the alternate model scenario.
 12 Rather than relying on conjecture, as Plaintiffs do, Lead Defendants provide a “full
 13 analytical defense” of this modeled scenario. *Nat’l Parks Conservation Ass’n v. EPA*, 788
 14 F.3d 1134, 1146 (9th Cir. 2015) (citation omitted). Notably, FWS has accounted for further
 15 reductions or even eliminating diversionary feeding altogether by studying release
 16 scenarios and management actions it can take to maintain the lower mortality rate and retain
 17 population levels. (FWS038654.)

18 Additionally, Plaintiffs argue the PVA improperly assumed that at least 15% of
 19 wolves would be fed for the entire 100-year simulation. (Doc. 56 at 26–27.) Because the
 20 model incorporated an assumption that supplemental feeding boosts litter size, the 15%
 21 feeding assumption resulted in an enhanced level of reproduction for 15% of wolves for
 22 the entire 100 years simulated. (FWS038100, FWS038103, FWS038160.) Lead Plaintiffs
 23 argue this assumption of “perpetual” feeding is inconsistent with the ESA’s recovery goal
 24 of creating “populations that are self-sustaining without human interference.” *Trout
 25 Unlimited v. Lohn*, 559 F.3d 946, 957 (9th Cir. 2009). First, contrary to Plaintiffs’
 26 suggestion, the Court finds a 100-year assumption does not equate to a “perpetual”
 27 assumption. Nothing in the ESA requires FWS to create a self-sustaining population within
 28 a certain timeframe, so it follows that an assumption projected 100 years into the future

1 can still “further the conservation” of the species. *See* 16 U.S.C. § 1539(j)(2)(A). Second,
 2 Plaintiffs cite no legal authority to support their claim that an *input* into a model upon
 3 which a 10(j) rule is based must “further the conservation” of a species. In the absence of
 4 such authority, the Court finds FWS can incorporate a minimal level of diversionary
 5 feeding as a management tool into its model without running afoul of the ESA and APA.

6 Second, Plaintiffs assert the Miller PVA failed to incorporate any inbreeding effects
 7 on litter size, despite acknowledging some inbreeding impacts “may currently be masked”
 8 by supplemental feeding and noting detection of inbreeding impacts is difficult. (Doc. 56
 9 at 28; *see also* FWS038100.) Additionally, Plaintiffs contend FWS failed to explain why
 10 it disregarded Dr. Fredrickson’s findings to the contrary. (Doc. 56 at 28.) In response,
 11 Defendants note Dr. Fredrickson’s findings conflicted with newer studies performed by
 12 researchers Clement and Cline. (*See* Doc. 64 at 26.) Because of this, Defendants note
 13 FWS biologists and the Recovery Planning Workshop participants agreed to omit
 14 inbreeding depression on litter size from the PVA’s assumptions. (*Id.*)

15 In support of their argument that FWS ignored Dr. Fredrickson’s findings, Plaintiffs
 16 cite *Center for Biological Diversity v. Zinke*, 900 F.3d 1053 (9th Cir. 2018). In that case,
 17 the Ninth Circuit concluded “FWS acted in an arbitrary and capricious manner” by
 18 “ignoring available data” showing a decline in effective breeders when finding the fluvial
 19 arctic grayling population was increasing as part of a listing decision under the ESA. *Id.*
 20 at 1068. There, FWS stated during the litigation it had relied on “more current” yearly data
 21 rather than the older, longitudinal study. *Id.* at 1068–69. Nevertheless, the Ninth Circuit
 22 reasoned “the listing decision should have included ‘adequate explanation and support for
 23 its determinations.’” *Id.* (quoting *San Luis*, 747 F.3d at 625). Moreover, the Ninth Circuit
 24 noted FWS failed to provide a “reasonable explanation for adopting its approach” by not
 25 discussing the conflicting study’s data. *Id.* at 1069 (quoting *Alaska Oil & Gas Ass’n v.
 26 Pritzker*, 840 F.3d 671, 679 (9th Cir. 2016)). Ultimately, FWS’s arguments there failed
 27 because they served as post-hoc rationalizations rather than rationalizations articulated by
 28 FWS during its decision-making process as reflected in the administrative record. *See*

1 *id.* (“[A]n agency’s action must be upheld, if at all, on the basis articulated by the agency
 2 itself, not post-hoc rationalizations.” (alteration in original) (quoting *Greater Yellowstone*
 3 *Coal.*, 665 F.3d at 1027 n.4)).

4 Unlike FWS’s post-hoc rationalizations in *Zinke*, the administrative record here
 5 reflects FWS’s contemporaneous explanation as to why it would not incorporate Dr.
 6 Fredrickson’s findings on the effects of inbreeding on litter size into the Miller PVA. (*See*,
 7 *e.g.*, FWS038657.) As the Miller PVA itself explained, any inbreeding effects on litter size
 8 were indeterminate because they may be “masked by confounding factors such as the
 9 presence of diversionary feeding.” (FWS038100.) Additionally, because FWS had not
 10 documented negative effects on litter size related to inbreeding in the MWEPA
 11 (FWS030434), it was even more reasonable for FWS to reject Dr. Fredrickson’s older
 12 analysis performed under substantially different diversionary feeding conditions.
 13 Accordingly, the Miller PVA’s assumptions on litter size and the effect of inbreeding were
 14 reasonable because FWS considered, but eventually rejected, conflicting evidence.

15 Third, Lead Plaintiffs contend the Miller PVA’s assumption that 78% of adult
 16 females would pair with a mate each year (the “female pairing rate”) was overly optimistic.
 17 (Doc. 56 at 28.) FWS arrived at this assumption by averaging two female pairing rates
 18 derived from Mexican wolf data. (FWS034879–81.) The first rate—86%—was based on
 19 a dataset of “[d]irect observations of paired status” of radio-collared female wolves in the
 20 MWEPA. (FWS034879–80.) FWS noted this rate “may be biased high” due to a sampling
 21 method that prioritized “breeding adults.” (*Id.*) The second rate—69%—was based on the
 22 number of females in the entire population (collared and non-collared) compared to the
 23 estimated number of pairs in the population. (FWS034880.) FWS characterizes this as an
 24 indirect measure of the female pairing rate. (*Id.*)

25 The Court finds FWS’s use of a 78% female pairing rate as set forth in the Miller
 26 PVA was not arbitrary and capricious. A response to a comment regarding this pairing rate
 27 highlights why FWS’s choice was reasonable:

28 Once a female is paired (78% of the time), she then has a probability of

1 producing a detectable litter in that year of approximately 70%. Taken
2 together, the probability of a given adult female pairing and producing pups
3 in a year is about 50%, which is the same value used in the previous Carroll
4 et al. (2014) analysis.

5 (FWS038656.) Plaintiffs contend FWS should have relied on evidence from other wolf
6 populations, which reflect a mean pairing rate of 68%, instead of averaging the two rates
7 to arrive at 78%, or should have explained its decision better. (See Doc. 56 at 29.)
8 However, regardless of whether the specific percentage itself is reasonable, ultimately the
9 result is the same as in Plaintiffs' preferred analysis, i.e., the Carroll PVA. Because both
10 the Miller PVA relied upon by FWS and Plaintiffs' preferred analysis conclude the
11 probability of any adult female pairing and producing pups in a year is about 50%, the
12 Court finds Plaintiffs' contention this female pairing rate is unreasonable unpersuasive.
13 (See FWS038656 (citing Carroll et al. (2014).))

14 **2. The Rule's Genetic and Population Objectives**

15 Plaintiffs contend the genetic and population objectives set by FWS would result in
16 genetic decline, even ignoring the inherent "flaws" in the Miller PVA. (Doc. 56 at 25, 29.)
17 Specifically, Plaintiffs assert it was unreasonable for FWS to set objectives the Miller PVA
18 predicted would allow the wild population to retain 90% of the genetic diversity from the
19 captive population after 100 years. (*Id.* at 29–30.) Instead, Plaintiffs assert FWS should
20 have either set the objectives at levels to result in 90% of the then-current level of diversity
21 in the captive population or in the wild and captive populations combined. (*Id.*) In
22 response, Defendants mention Plaintiffs fail to explain how the population objective would
23 result in genetic decline and highlight the unavoidable genetic struggles inherent in the
24 population's origin of only seven wolves. (Doc. 64 at 29.)

25 The Court finds Plaintiffs' argument falls flat. Recovery planning notes reflect,
26 when the genetic objective concerns were raised, FWS addressed them by noting the
27 limited genetic diversity it had to work with and the need to establish an attainable genetic
28 metric. (FWS012060–61.) Plaintiffs never explain how FWS could have overcome the
founders' initial genetic limitations, and to what degree, so their argument appears to be

1 that FWS should have set an unattainable genetic metric. But that too would fail to
2 “conserve” or “recover” the Mexican wolf. Plaintiffs seem to ask this Court to rule that
3 FWS must promulgate a rule with objectives above and beyond biological possibility given
4 the natural limits of the founding population. However, nothing in the administrative
5 record warrants this approach, and it was reasonable for FWS to set the objectives it did in
6 the absence of evidence that higher genetic goals were attainable.

7 3. How The Population and Genetic Objectives Account for Uncertainty in the
8 Model, If At All

9 Lead Plaintiffs argue the population and genetic objectives fail to account for
10 uncertainty in the model, specifically, the objectives incorporate no margin of safety or
11 “guardrails” based on the Miller PVA’s limitations. (Doc. 56 at 33.) In response, Lead
12 Defendants note FWS “appropriately cushioned against the noted uncertainties in the PVA
13 by committing to continued monitoring of the MWEPA population and adjustment of
14 management strategies if recovery efforts fail to yield the predicted results.” (Doc. 64 at
15 30.)

16 The Court finds FWS’s decision not to control for some uncertainty in the Miller
17 PVA reasonable. A model is naturally limited because no scientific study can predict the
18 future, as Dr. Miller noted within the PVA. (*See* FWS034826 (“PVA methodologies such
19 as the *Vortex* system are not intended to give absolute and accurate ‘answers’ for what the
20 future will bring for a given wildlife species or population.”).) Plaintiffs attempt to use
21 statements like this in the introduction to the Miller PVA and in comments from Dr. Carroll
22 to indicate the objectives should have been set even more conservatively than those within
23 the output of the modeled scenario. Specifically, Plaintiffs note the “Miller PVA’s
24 predictions depended on maintaining adult removal/mortality below 20.9%[,] even after
25 supplemental feeding is ended and removal/mortality would be expected to increase.”
26 (Doc. 56 at 33.) By failing to incorporate a condition related to mortality rate into the
27 Revised 10(j) Rule, Plaintiffs argue “FWS omitted a key guardrail against falling short of
28 the model’s predictions.” (*Id.*) Yet the question is not whether FWS should have adopted

1 a guardrail for mortality but whether it was arbitrary for FWS not to do so. Plaintiffs have
2 not demonstrated it was arbitrary because FWS explained it would continue to study these
3 impacts and incorporate new scientific information as it became available.

4 Additionally, although the Miller PVA did not include a comprehensive sensitivity
5 analysis to evaluate the impact of parameter uncertainty (*see* Doc. 56 at 32; *see also*
6 FWS034869), the Miller PVA considered many release scenarios and demographic
7 information from the full genetic makeup of all living Mexican wolves in the United States,
8 building upon Dr. Carroll’s work from 2014. None of Plaintiffs’ arguments indicate the
9 uncertainties identified and failure to conduct a sensitivity analysis render the *objectives*
10 unreasonable. Rather, Plaintiffs appear to want *different* objectives in the Rule based on
11 assumptions in the PVA. FWS’s omission of a mortality-based criterion was reasonable
12 because no evidence in the administrative record indicates a PVA without a sensitivity
13 analysis is required before it can be used to set a management objective. *Cf. Tucson*
14 *Herpetological Soc’y v. Salazar*, 566 F.3d 870, 879 (9th Cir. 2009) (finding Secretary’s
15 conclusion that lizard population was not declining based on a study noting results could
16 serve as “baseline for future monitoring” and “should be viewed with caution as
17 [population estimates] were based on sparse data” unsupported by administrative record).
18 Unlike in *Tucson Herpetological Society*, where the agency head made a factual finding
19 that contravened a study in the administrative record, here, FWS used a study, noting its
20 limitations (*see* FWS30374), to set management objectives in a rule. As Dr. Miller noted,
21 “the complexity of this data analysis effort resulted in a long list of measurement
22 uncertainties across a range of model input variables,” and a “comprehensive examination
23 of the impact of this range of uncertainty on population viability” might “significantly alter
24 the strategic decisions proposed by the relevant management authorities to promote
25 Mexican wolf recovery in the wild.” (FWS038140.) Yet Plaintiffs fail to produce any
26 scientific study indicating an exact impact of measurement uncertainties across these
27 variables beyond the 2014 Carroll study relied upon in the Miller PVA. Because the
28 impacts and extent of the uncertainty were unknown, FWS could not reasonably control

1 for them in the current rule.

2 ***ii. Using Proxy Instead of Actual Outcomes for Genetic Objective***

3 Plaintiffs argue there is no reason actual genetic diversity could not be incorporated
4 into the genetic objective, rather than a proxy. (Doc. 56 at 33–34.) The proxy they refer
5 to is FWS’s genetic objective—for 22 released wolves to survive to breeding age. (*Id.* at
6 34.) Plaintiffs critique this aspect of the Rule, noting it fails to consider whether these
7 wolves actually breed and reproduce to an extent that would “improve the wild
8 population’s genetic status” and alleviate “the long-term genetic threat to Mexican wolf
9 recovery.” (*Id.*) In response, Defendants argue the proxy is reasonable because it mirrors
10 reality. (Doc. 64 at 33–34.) Specifically, Defendants assert the assumption that releasing
11 genetically valuable wolves into the MWEPA will alleviate the threat posed by a lack of
12 genetic diversity “is particularly justified here because [FWS] cannot control breeding
13 events in the wild but can control the genetic makeup of wolves released from captivity
14 into the wild.” (*Id.* at 34; *see also* FWS030505.) Moreover, Defendants contend “the
15 surrogate measure of genetic diversity ‘does not exist in a vacuum’ and is verifiable
16 through further studies and supplemental direct monitoring.” (Doc. 64 at 34 (quoting
17 *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1066 (9th Cir.
18 2004)).)

19 The Court finds Defendants’ choice to use a proxy rather than a direct measurement
20 of genetic health reasonable because the proxy reflects reality and accounts for the inherent
21 limitations of conservation management. *See Gifford Pinchot Task Force*, 378 F.3d at
22 1066. As Defendants explain, using actual genetic health data is not as practicable as using
23 a metric that fairly predicts increased genetic health. (Doc. 64 at 33–34.) The Miller PVA
24 accounted for the assumption that not every released wolf will breed, and some released
25 wolves will breed more than once. (See FWS030505.) Studies of the Mexican wolf show
26 that a released female has a 97% likelihood of producing at least one litter if she survives
27 to age 6. (FWS038664.) This means that genetically valuable wolves strategically released
28 by FWS and surviving to breeding age have a very high probability of infusing their genetic

1 diversity into the wild population, thereby increasing genetic health.⁷ Therefore, the Court
 2 finds this genetic surrogate measure reasonable as a management strategy, especially
 3 where, as here, direct measuring poses challenges and the genetic surrogate rationally
 4 mirrors genetic health.

5 ***iii. Take Provisions Conditioned on Genetic Objective***

6 Plaintiffs' argument on the take provisions relies heavily on the invalidity of the
 7 Rule's genetic objective (*see* Doc. 56 at 37), as the Court dispensed with above. *See supra*
 8 Section IV(a)(ii). Specifically, Plaintiffs assert the current Rule's take provisions fail to
 9 remedy the issue identified in the 2018 remand order, which "held that those take
 10 provisions—which allowed for expanded permitting of take on federal land, non-federal
 11 land, and in response to 'unacceptable impacts' to wild ungulate herds—'do not contain
 12 adequate protection for the loss of genetically valuable wolves.'" (Doc. 56 at 37 (quoting
 13 *Jewell*, 2018 WL 1586651, at *15).) Defendants respond "[t]hese temporary take
 14 restrictions will protect and contribute to the recovery of Mexican wolf genetic diversity"
 15 in several ways. (Doc. 64 at 36.)

16 Having found the genetic proxy reliable, the Court finds FWS's take provisions
 17 reasonable. The take options in the revised Rule are contingent upon achievement of the
 18 22-wolf genetic objective, which FWS has shown will improve genetic diversity.
 19 Therefore, the Court finds the 2022 Rule's take provisions contain adequate protection for
 20 the loss of genetically valuable wolves. Unlike the take provisions in the 2015 version of
 21 the rule, which did not contain any protection against the loss of genetic diversity, the 2022
 22 Rule's take provisions are in line with the ESA's conservation purpose and policy, and
 23 Plaintiffs have not shown they operate to disadvantage the Mexican wolf.

24 Nor have Plaintiffs explained why the take provisions are inadequate aside from
 25 their reliance on the genetic proxy. Defendants note, "by reducing take, the likelihood that

26 ⁷ In their Reply, Plaintiffs note only 41% of two-year-old (adult) released females
 27 will survive to age six (breeding age), and "those that do are unlikely to live as long, breed
 28 as frequently, or have as many surviving pups as the Miller PVA irrationally projects."
 (Doc. 89 at 23; *see also* FWS038664.) Plaintiffs' concerns about the 41% probability of a
 female wolf living until age 6 ignore how Dr. Miller arrived at and justified those
 calculations and how the genetic objective works.

1 genetically valuable released wolves contribute their genetic diversity to the experimental
 2 population increases,” and “the 2022 10(j) Rule decreases the time necessary to reach the
 3 genetic objective” by approximately five years “compared to population management
 4 under the 2015 take allowances.” (Doc. 64 at 36; *see also* FWS027769, FWS027873;
 5 FWS032682; FWS030505.) Additionally, as Defendants explain, “the temporary take
 6 restrictions permit [FWS] to improve the genetic diversity of the experimental population
 7 in the short-term while the population is smaller.” (Doc. 64 at 36–37; *see also*
 8 FWS027769.) These justifications are sufficient to show the take provisions will further
 9 the conservation of the Mexican wolf and protect against genetic loss, especially in the
 10 short term where that protection is the most critical. Therefore, the Court finds FWS did
 11 not act arbitrarily and capriciously in conditioning the take provisions on the genetic
 12 objective and the take provisions are a reasonable way to protect against loss of genetic
 13 diversity.

14 ***iv. I-40 MWEPA Boundary***

15 Lead Plaintiffs contend experts advise that long-term recovery of the Mexican wolf
 16 will require the establishment of a domestic metapopulation, rather than FWS’s current
 17 approach based on a binational recovery effort. (*See* Doc. 56 at 37–43.) They also contend
 18 FWS’s reliance on Martinez-Meyer (2017) was unreasonable because that study failed to
 19 evaluate the true status of the habitat in Mexico. (*See id.* at 40–41.) Lead Defendants assert
 20 the geographic boundary of the MWEPA is outside the scope of what FWS was required
 21 to consider on remand. Nevertheless, they also argue, as to the merits of Lead Plaintiffs’
 22 contention regarding the boundary, FWS’s “decision to maintain I-40 as the northern
 23 boundary of the MWEPA was a reasonable management choice that furthers the
 24 conservation of the species.” (Doc. 64 at 38.)

25 Here, the I-40 restriction is justified for several reasons. Under the regulations in
 26 effect at the time the 2022 10(j) Rule was promulgated, the range of an experimental
 27 population was limited to the species’ “probable historic range,” except in the “extreme
 28 case that the primary habitat of the species has been unsuitably and irreversibly altered or

1 destroyed.” 50 C.F.R. § 17.81(a).⁸ Evidence from the administrative record shows FWS
 2 relied on the Martinez-Meyer study—a peer-reviewed and published habitat-suitability
 3 analysis—to model the probable historical range of the Mexican wolf. (See FWS030193–
 4 205; *see also* Doc. 64 at 38.) The study used oral and published occurrence records and
 5 climactic suitability analysis to identify the species’ historical distribution in the United
 6 States, synthesizing data from all historical records from Arizona, New Mexico, and
 7 southwest Texas. (See FWS030193–97.) In Arizona and New Mexico, historical
 8 occurrence records revealed that Mexican wolves largely ranged south of I-40.
 9 (FWS030197.) Thus, I-40 serves as a major geographic feature that clearly designates the
 10 boundary for the experimental population within its historical range. The Court finds this
 11 boundary is reasonable as it reflects the Mexican wolf’s historic range and allows FWS to
 12 foster better partnerships with stakeholders, including the states, Tribes, and landowners.
 13 (See FWS002535.)

14 Next, Plaintiffs attack FWS’s reliance on its binational recovery effort as set forth
 15 in the 2017 Recovery Plan to show the I-40 boundary is not justified. Plaintiffs contend
 16 FWS’s reliance on Martinez-Meyer (2017) and the Miller PVA “to conclude that Mexico
 17 could support a self-sustaining, long-term, genetically healthy Mexican wolf population”
 18 was arbitrary and capricious because, in doing so, it ignored documented conditions in
 19 Mexico and the limitations of these studies. (Doc. 56 at 41.) First, Plaintiffs note Martinez-
 20 Meyer failed to consider the import of land ownership, despite higher levels of private land
 21 ownership in Mexico and the impact of private killing of wolves on mortality. (See Doc.
 22 56 at 40.) Second, Plaintiffs explain the Martinez-Meyer study lacked reliable data on the
 23 density of potential wolf prey (i.e., deer and other ungulates) in Mexico, despite prey
 24 availability being one of “the most important habitat attributes” for Mexican wolves.
 25 (FWS038053; Doc. 56 at 40.) Third, and most critically, Plaintiffs contend the documented

26
 27 ⁸ Plaintiffs claim FWS’s reliance on this regulation constitutes legal error because
 28 the “probable historic range” aspect is unsupported by the ESA itself. (See Doc. 56 at 43
 n.8.) However, regardless of whether this was a legal error, Plaintiffs fail to explain why
 it is unreasonable for FWS to rely on the “probable historic range” as a factor in
 determining the boundaries of the MWEPA.

1 conditions in Mexico were worse than the Miller PVA predicted. (See Doc. 56 at 42.) In
 2 response, Defendants note “[w]hether the Mexico population ultimately will contribute to
 3 the species’ recovery is a question to be answered through a recovery plan for the species
 4 at large, not through a management rule for one experimental population.” (Doc. 64 at 42.)

5 The Court agrees with Defendants. Despite challenges in Mexico, the Court finds
 6 these challenges do not render FWS’s I-40 boundary arbitrary and capricious. Plaintiffs
 7 do not point to current studies showing how allowing Mexican wolves to roam freely north
 8 of I-40 will further their conservation. And even if they had done so, they do not explain
 9 how this freely roaming management style would comport with the regulatory
 10 requirements for an experimental population.⁹ Plaintiffs also do not make clear to what
 11 extent they think FWS should have expanded the boundary, aside from completely
 12 adopting Plaintiffs’ preferred domestic metapopulation strategy, and they fail to point to
 13 current science in the administrative record supporting such an expansion.

14 Furthermore, even if the Court were inclined to support Plaintiffs’ preferred
 15 domestic metapopulation management strategy, the Court “is not empowered to substitute
 16 its judgment for that of the agency” under the APA’s “narrow” standard of review. *Citizens*
 17 *to Pres. Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971); *see also Tucson*
 18 *Herpetological Soc’y*, 566 F.3d at 879 (“[W]hen examining decisions made under
 19 conditions of scientific uncertainty ‘a reviewing court must generally be at its most
 20 deferential.’” (citation omitted)). In the absence of studies related specifically to the
 21 insufficiency of the I-40 boundary itself, Plaintiffs have failed to establish a nexus between
 22 the general critiques of the relevant studies as they relate to the Mexico population and the
 23 arbitrary nature of the I-40 boundary.¹⁰

24

25
 26 ⁹ According to the regulations, a 10(j) rule must include means to identify the
 27 experimental population and measures to isolate/contain the population. 50 C.F.R.
 28 § 17.81(c)(1), (3).

¹⁰ It appears Plaintiffs deem deficient any recovery strategy or assumption by FWS
 to preserve the Mexican wolf that does not comport with their preferred approach. This
 creates an ongoing cycle of litigation and ignores the success FWS has had in conserving
 and repopulating the species.

v. *Nonessential Determination*

Consolidated Plaintiffs contend FWS's determination that the MWEPA experimental population of Mexican wolves is "nonessential" to the continued existence of the species violates the ESA because FWS (1) arbitrarily relied on the captive breeding program, (2) failed to evaluate or analyze whether the captive breeding program is capable of replacing the wild population if lost, (3) failed to rely solely on biological factors and apply the best available science, and (4) arbitrarily relied on a struggling population in Mexico. (Doc. 59 at 22–43.) In response and in their cross-motion, Consolidated Defendants contend FWS's nonessential determination reasonably considered the population of Mexican wolves in Mexico in 2022 and the captive population in the United States. (Doc. 78 at 24, 29.) Additionally, Consolidated Defendants assert FWS's nonessential determination did not consider improper factors. (Doc. 78 at 38.)

Before authorizing the release of any experimental population, the Secretary of the Interior must make an essentiality determination. *See* 16 U.S.C. § 1539(j)(2)(B). An “essential experimental population” is one “whose loss would be likely to appreciably reduce the likelihood of the survival of the species in the wild.” 50 C.F.R. § 17.80(b). “All other experimental populations are to be classified as nonessential.” *Id.* When an agency promulgates 10(j) rules, therefore, it must explicitly make a “finding, based solely on the best scientific and commercial data available, and the supporting factual basis, on whether the experimental population is, or is not, essential to the continued existence of the species in the wild.” 50 C.F.R. § 17.81(c)(2); *see also* 16 U.S.C. § 1539(j)(2)(B); Endangered and Threatened Wildlife and Plants; Experimental Populations, 49 Fed. Reg. 33885, 33890 (Aug. 27, 1984) (“Also inherent in th[e essentiality] determination is the consideration of what the potential loss of the experimental population will have on the species as a whole.”).

“When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive.” *Marsh*, 490 U.S. at 378. *But see* *Defs.*

1 *of Wildlife v. Norton*, 258 F.3d 1136, 1145 (9th Cir. 2001) (noting a conclusion in the
 2 absence of a satisfactory explanation is arbitrary).

3 First, the Court finds FWS reasonably relied on the captive breeding program.
 4 Consolidated Plaintiffs attempt to use the ESA's conservation objective, which states
 5 agencies must conserve species "in the wild," to argue FWS cannot rely on a *captive*
 6 breeding program to further the conservation of the species. However, this argument defies
 7 logic and fails to consider the realities of reintroduction programs. *Cf.* Endangered and
 8 Threatened Wildlife and Plants; Revision to the Regulations for the Nonessential
 9 Experimental Population of the Mexican Wolf, 80 Fed. Reg. 2512, 2550 (Jan. 16, 2015)
 10 ("If importance to recovery was equated with essentiality, no reestablished populations of
 11 a species would qualify for nonessential status."). When promulgating ESA Section 10(j)
 12 regulations in 1984 to facilitate designation of experimental populations, FWS expressly
 13 contemplated consideration of captive populations when making essentiality
 14 determinations. *See* 49 Fed. Reg. at 33888 (indicating "[a]n 'essential' experimental
 15 population will be a special case, not the general rule" because "there can be situations
 16 where . . . individuals can be removed to provide a donor source for reintroduction without
 17 creating adverse impacts upon the parent population," which "is especially true if captive
 18 propagation efforts are providing individuals for release into the wild"). Practically
 19 speaking, FWS would never be able to introduce nonessential experimental populations if
 20 Plaintiffs' understanding of the conservation mandate prevailed.

21 Second, FWS properly evaluated and analyzed whether the captive breeding
 22 program could replace the wild population in the event the experimental population is lost.
 23 Specifically, FWS considered the growth of the wild and captive populations over time,
 24 the ability of the captive population to replace the wild one, and the impact of genetic health
 25 on whether the captive population could replace the wild one. FWS addressed some
 26 logistics of this hypothetical scenario, expressly outlining how it could use the captive
 27 population to restart the experimental population if necessary. (*See* FWS032665.)
 28 Specifically, in its hypothetical release scenario assuming no wild population, FWS

1 indicated it would release packs, pairs, and individual animals, including adult wolves, over
2 several years to reestablish the population, working with its partners to support the natural
3 growth and expansion of the experimental population through adaptive management
4 strategies and tools like those it has utilized since the reintroduction began. (*Id.*)

5 Plaintiffs list 10 items they assert FWS did not explore, but should have, in this
6 hypothetical release scenario. (Doc. 59 at 32–33.) Defendants contend they “evaluated
7 most items” on Plaintiffs’ list, “including genetic diversity, logistics, and the captive
8 population’s ability to supply wolves for reintroduction.” (Doc. 78 at 36.) And, for those
9 factors FWS did not consider, like the wild population’s alleged *in situ* evolutionary
10 adaptive changes, Defendants assert no studies existed on that topic in 2022. (*Id.*)

11 FWS need not create new science to plan for hypothetical conservation actions
12 under the ESA. *See, e.g., San Luis*, 747 F.3d at 602 (“Where the information is not readily
13 available, we cannot insist on perfection: The best scientific data available, does not mean
14 the best scientific data possible.” (cleaned up)). Therefore, the Court finds the approach
15 detailed by FWS in the administrative record is reasonable, despite lacking the level of
16 detail Plaintiffs desire. This approach is especially reasonable because it is exactly how
17 FWS has furthered the conservation of the species in the past, rescuing the species from a
18 nonexistent wild population to a thriving one. Therefore, because of FWS’s historic
19 success with this approach and its logistical analysis of how each population interacts, the
20 Court finds FWS provided sufficient information and reasoning from which to conclude it
21 could use the captive population to replace the wild one.

22 Plaintiffs assert FWS would need to consider the age of wolves in captivity, how
23 many are capable of release, and whether those wolves would fully replace the wild
24 population’s gene diversity, among other things. But requiring FWS to analyze these
25 specific details makes little sense when the demography of the captive population is ever-
26 changing, and no specific timeframe is clearly identified by the statute or regulations.
27 Moreover, Plaintiffs fail to link those considerations to the standard. No evidence Plaintiffs
28 proffer indicates those considerations render the continued existence of the Mexican wolf

1 infeasible. *See* 16 U.S.C. § 1539(j)(2)(B). Nor do they provide a rationale for how these
 2 considerations indicate the loss of the MWEPA experimental population is “likely to
 3 appreciably reduce the likelihood of the survival of the species in the wild.” 50 C.F.R.
 4 § 17.80(b). Plaintiffs ask a series of detailed questions to challenge the hypothetical release
 5 scenario as lacking reason:

6 [I]f we lost all 200 wolves in the wild in the United States, how many captive
 7 wolves would need to be released in the first year, in the second year, and so
 8 on to result in a new experimental population? And over how long? Would
 9 it take another 20 years, or 30 years, or more to result in a population of
 10 approximately 200 wolves? And, if so, how will the genetic health of the
 captive population continue to change over that same period of time? None
 of these questions were asked or answered by [FWS].

11 (Doc. 87 at 21.) Yet just because FWS did not answer these questions does not mean they
 12 fail to provide a “reasoned basis” for their nonessential determination. Nothing in the ESA
 13 or APA requires FWS to answer questions about a hypothetical scenario with this level of
 14 detail before concluding an experimental population is nonessential. To require as much
 15 from FWS would result in continuous litigation as more creative and clever questions are
 16 proposed.

17 Lastly, Plaintiffs seem to assert Defendants should have run a release scenario under
 18 the Miller PVA assuming the presence of zero wild wolves to provide scientific support
 19 for the captive population’s ability to replace the wild population. However, this is akin to
 20 asking FWS to create new science, and the Court declines to do so considering FWS’s
 21 reasoned conclusion that the captive population could replace the wild one, if lost. The
 22 question is not whether FWS performed the best analysis or the analysis Plaintiffs deem
 23 more appropriate, but whether it performed an analysis.

24 Third, FWS relied on biological factors and applied the best available science.
 25 Although Plaintiffs contend FWS “based its nonessential determination on largely political
 26 or policy grounds rather than the best available science or biological factors as required by
 27 the ESA” (Doc. 59 at 12), the evidence they point to as support—FWS’s consultation with
 28 appropriate state fish and wildlife agencies, local governments, etc.—is plainly what is

1 required under Section 10(j). Importantly, any 10(j) rule must, “to the maximum extent
2 practicable, represent an agreement between [FWS], the affected State and Federal
3 agencies and persons holding any interest in land which may be affected by the
4 establishment of” the experimental population. 50 C.F.R. § 17.81(d). And, “[i]n a situation
5 where an affected agency, organization, or individual refuses to cooperate on a
6 reintroduction because of an essentiality designation,” FWS has the discretion to
7 “reevaluate the designation and, if the status remains unchanged, may withdraw the
8 proposal” for reintroduction altogether. *See* 49 Fed. Reg. at 33888. This consultation is
9 not only important from a management perspective but also to avoid increased risks to
10 wolves in the absence of local stakeholder agreement. Nothing about FWS’s consultations
11 with various stakeholders, which, at least in part, helps reduce Mexican wolf mortality by
12 decreasing conflict, displaces its reliance on biological factors or the best available science.

13 Fourth, FWS reasonably relied on the population in Mexico. Plaintiffs seem to
14 imply there is a geographic limit to an analysis of the species as a whole under the relevant
15 regulations, yet, when making essentiality determinations for other experimental
16 populations in the United States, FWS routinely considers the presence of species in the
17 wild in Mexico. *See, e.g.*, Endangered and Threatened Wildlife and Plants; Establishment
18 of a Nonessential Experimental Population of the California Condor in the Pacific
19 Northwest, 86 Fed. Reg. 15602, 15608 (Mar. 24, 2021) (considering Mexico population in
20 essentiality determination for California condor 10(j) rule); Endangered and Threatened
21 Wildlife and Plants; Establishment of a Nonessential Experimental Population of Sonoran
22 Pronghorn in Southwestern Arizona, 76 Fed. Reg. 25593, 25597 (May 5, 2011)
23 (considering Mexico population in essentiality determination for Sonoran pronghorn 10(j)
24 rule); Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential
25 Experimental Population of Northern Aplomado Falcons in New Mexico and Arizona, 71
26 Fed. Reg. 42298, 42301 (July 26, 2006) (considering Mexico population in essentiality
27 determination for Aplomado falcon 10(j) rule). Consolidated Plaintiffs do not point to any
28 case striking these regulations down. Nor do they cite any statute or regulation *prohibiting*

1 the consideration of the species' status outside of the United States. Moreover, the Court
2 agrees with Consolidated Defendants—FWS could not have reasonably ignored the
3 presence of Mexican wolves in Mexico in its 2022 nonessential determination because that
4 reality was part of “the best available information” it was required to consider. (See Doc.
5 78 at 25 (quoting 16 U.S.C. § 1539(j)(2)(B).) Therefore, it was especially reasonable for
6 FWS to rely on this population, even though these wolves happen to exist south of the
7 United States border.

8 **b. The National Environmental Policy Act (NEPA)**

9 Lead Plaintiffs contend FWS violated NEPA in promulgating the 2022 10(j) Rule
10 by: (1) failing to take the requisite “hard look” at the impacts of the Rule and ensure the
11 scientific integrity of its environmental analysis; and (2) failing to consider a reasonable
12 range of alternatives. (Doc. 56 at 44–45.) Additionally, Consolidated Plaintiffs assert FWS
13 violated NEPA by failing to conduct a NEPA analysis of the essentiality determination.
14 (Doc. 59 at 44–45.)

15 *i. Hard Look*

16 Lead Plaintiffs assert FWS failed to take a hard look at the environmental impacts
17 of its decision in its SEIS by: (1) “grounding its Mexican wolf impacts analysis on the
18 flawed Miller PVA, which incorporated unjustified, overly optimistic assumptions and data
19 and as a result underestimated extinction risk and genetic loss,” (2) “relying on the
20 scientifically unsound assumption that genetic problems would no longer threaten Mexican
21 wolf recovery if the wild population maintained 90% of the captive population’s
22 deteriorated genetic diversity after 100 years,” (3) “relying on the Miller PVA without
23 including buffers or guardrails to account for its uncertainties,” (4) “failing to rationally
24 explain its choice of a model-based proxy for genetic recovery in lieu of actual genetic
25 outcomes,” and (5) “failing to analyze the impact of precluding Mexican wolves from
26 dispersing and establishing populations north of I-40 and retaining the I-40 boundary based
27 on flawed and unreliable studies that incorporated incorrect assumptions, omitted relevant
28 factors, and were undermined by subsequent information that FWS failed to consider.”

1 (Doc. 56 at 45.) Lead Defendants respond FWS’s assumptions and the Miller PVA’s inputs
 2 and limitations were detailed in the record and FWS took a hard look at all the
 3 considerations raised by Plaintiffs. (Doc. 64 at 43–44.)

4 “A court’s inquiry, when reviewing whether an agency complied with NEPA, is
 5 whether the agency adequately considered a project’s potential impacts and whether the
 6 consideration given amounted to a ‘hard look’ at the environmental effects.” *N. Alaska*
 7 *Env’t Ctr. v. Kemphorne*, 457 F.3d 969, 975 (9th Cir. 2006) (quoting *Idaho Sporting*
 8 *Cong., Inc. v. Rittenhouse*, 305 F.3d 957, 963 (9th Cir. 2002)). “[A]ll foreseeable direct
 9 and indirect impacts” must be considered during the agency’s “hard look,” without
 10 minimizing negative side effects. *Id.* (citation omitted). Moreover, NEPA requires
 11 agencies to “ensure the professional integrity, including scientific integrity, of the
 12 discussion and analysis” in an EIS. 42 U.S.C. § 4332(D). However, when “an agency
 13 undertakes technical scientific analyses, as with the development of models to help analyze
 14 a problem, the court’s deference to the agency’s judgment is at its peak.” *Idaho Wool*
 15 *Growers Ass’n v. Vilsack*, 816 F.3d 1095, 1107 (9th Cir. 2016).

16 “NEPA does not require” the Court to “decide whether an [EIS] is based on the best
 17 scientific methodology available” *350 Mont. v. Haaland*, 50 F.4th 1254, 1271–72
 18 (9th Cir. 2022). Nor does NEPA require the Court to decide whose experts have more
 19 merit. *See Greenpeace Action v. Franklin*, 14 F.3d 1324, 1333 (9th Cir. 1992) (“To set
 20 aside the [agency’s] determination in this case would require us to decide that the views of
 21 [Plaintiff’s] experts have more merit than those of the [agency’s] experts, a position we are
 22 unqualified to take.”). Accordingly, NEPA does not require an agency to have an
 23 “unattainable [level of] scientific certainty”; instead, “explanations and acknowledgments”
 24 of any relevant limitations and impacts “are all that NEPA requires.” *Idaho Wool Growers*
 25 *Ass’n*, 816 F.3d at 1109.

26 Here, FWS took a hard look at the likely effects of its action. As a threshold matter,
 27 the Court notes many of Plaintiffs’ arguments relate to the *substance* of FWS’s hard look,
 28 not whether the *procedural* requirement of taking a “hard look” under NEPA was met. *See*

1 *WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 924 (9th Cir. 2015)
 2 (“NEPA does not impose substantive obligations on the action agency.”). As detailed
 3 above, the Miller PVA’s assumptions were reasonable considering the available science.
 4 *See supra* Section IV(a)(i)–(iv). Because Plaintiffs’ hard look attack is wholly intertwined
 5 with substantive aspects already dismissed above, the Court finds FWS took a hard look at
 6 the environmental impacts of its decision.

7 *ii. Reasonable Range of Alternatives*

8 Lead Plaintiffs assert FWS’s analysis of alternatives violated NEPA because (1) it
 9 only considered one “lawful” alternative and (2) it did not consider more wolf-protective
 10 alternatives. (Doc. 56 at 46–47.) In response, Lead Defendants note the Final SEIS—
 11 which considered three alternatives in detail, including a no-action alternative—was
 12 sufficient to meet NEPA’s strictures. (Doc. 64 at 50.)

13 NEPA requires federal agencies to “study, develop, and describe appropriate
 14 alternatives to recommended courses of action in any proposal which involves unresolved
 15 conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E)
 16 (2022). “The range of alternatives that an agency must consider under NEPA is based on
 17 the purpose and need of the proposed agency action,” *Audubon Soc'y of Portland v. Haaland*, 40 F.4th 967, 981 (9th Cir. 2022), and the agency is only required to consider
 18 alternatives “reasonably related to the purposes of the project,” *Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 868 (9th Cir. 2004) (citation omitted).

21 The focus of the reasonable alternatives analysis is on the “substance of the
 22 alternatives” rather than “the sheer number of alternatives considered” because there is no
 23 minimum number of alternatives an agency must consider. *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1246 (9th Cir. 2005); *see also* 42 U.S.C. § 4332(C)(iii).
 24 “An agency need not . . . discuss alternatives similar to alternatives actually considered, or
 25 alternatives which are infeasible, ineffective, or inconsistent with the basic policy
 26 objectives” *Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Eng'rs*, 524 F.3d 938, 955 (9th Cir. 2008) (citation omitted). However, “[t]he existence of

1 a viable but unexamined alternative renders an [EIS] inadequate.” *Westlands Water Dist.*,
 2 376 F.3d at 868 (quoting *Morongo Band of Mission Indians v. F.A.A.*, 161 F.3d 569, 575
 3 (9th Cir. 1998)). In rejecting any alternatives, the agency must only “briefly discuss the
 4 reasons” why alternatives were “eliminated from detailed study.” 40 C.F.R. § 1502.14(a).
 5 The Court will address the arguments related to the range of alternatives in the context of
 6 the highly deferential APA standard. *See Nw. Ecosystem All.*, 475 F.3d at 1140.

7 Here, the Court finds FWS considered a reasonable range of alternatives. In the
 8 Final SEIS, FWS considered in detail three alternatives: (1) the Revised 10(j) Rule; (2) an
 9 alternative with the population and genetic objectives of the Revised 10(j) Rule but
 10 retaining the take provisions from the 2015 10(j) Rule without any restriction on the
 11 progress towards the genetic objective; and (3) the “no action” alternative (i.e., the 2015
 12 10(j) Rule). (FWS027758–62.) However, FWS also briefly explained other alternatives
 13 and reasons why they would be eliminated from further consideration. (See FWS027774–
 14 78.) To the extent Plaintiffs argue FWS should have discussed other alternatives in depth,
 15 rather than eliminating them from detailed consideration, their claim fails. None of the
 16 authority they cite engages with this nuance, nor do they explain the level of detail
 17 sufficient to make discussion of these alternatives “reasonable.”

18 Plaintiffs’ argument boils down to this—FWS cannot evaluate only a no-action
 19 alternative and a proposed/preferred action alternative when the no-action alternative has
 20 already been determined insufficient by a court. But none of the cases cited by Plaintiffs
 21 address the unique scenario where the SEIS for a revised rule has been issued after a prior
 22 version of the rule was remanded. Plaintiffs cite *Flaherty v. Bryson*, 850 F. Supp. 2d 38,
 23 73 (D.D.C. 2012), for the proposition that unlawful alternatives cannot be reasonable
 24 alternatives to consider. (Doc. 56 at 46–47.) However, the district court in *Flaherty* was
 25 referring to alternatives that violated a statute, not alternatives that were aspects of a rule
 26 previously held partially inadequate by a court pursuant to a statute.

27 Similarly, Plaintiffs’ challenge regarding the substance of the alternatives fails
 28 because they point to no evidence demonstrating the feasibility of their preferred

1 alternatives within the scope of the SEIS’s purpose and need. (Doc. 56 at 47–48.) This
 2 part of Plaintiffs’ NEPA challenge centers on FWS’s failure to consider in detail “any
 3 alternatives that would expand the MWEPA north of I-40 or allow Mexican wolves to
 4 inhabit areas north of I-40 without being captured and removed, set a larger population
 5 objective, set a more aggressive and directly measured genetic objective, or include
 6 adequate protections against the taking of genetically valuable wolves.” (*Id.* at 47.)
 7 Defendants contend FWS satisfied NEPA by briefly discussing and eliminating from
 8 detailed study these more wolf-protective measures. (Doc. 64 at 41–42.)

9 In their Reply, Plaintiffs again assert FWS should have explored other alternatives.
 10 Specifically, Plaintiffs assert “commenters proposed doubling the number of captive
 11 releases required by the genetic objective by combining FWS’s cross-fostering strategy
 12 with releases of adult pairs with pups at the levels modeled in the Miller PVA.” (Doc. 89
 13 at 33 (citing FWS024783–84).) Plaintiffs contend “Dr. Carroll showed that combining
 14 such releases with a higher population target would have been far better for the Mexican
 15 wolf’s genetic recovery than FWS’s chosen course.” (*Id.*) When eliminating a version of
 16 this option from detailed study, FWS acknowledged releasing adult pairs with pups was
 17 feasible and “could have beneficial effects on the gene diversity of the experimental
 18 population” but stated FWS “currently prefer[s]” cross-fostering for various reasons,
 19 including “higher support from local communities/livestock operators” and increased
 20 capacity to release within a condensed timeframe. (FWS027774–75.) Because NEPA is a
 21 procedural statute, and thus only requires a certain procedure, not result, Plaintiffs’ claims
 22 fail. While NEPA requires viable alternatives to be examined in detail, not prematurely
 23 dismissed, *see Nat. Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir.
 24 2005), the Court finds Plaintiffs have not shown their proposed alternatives were
 25 sufficiently viable to warrant further consideration or to render FWS’s failure to more fully
 26 analyze them arbitrary and capricious. *Cf. Alaska Survival v. Surface Transp. Bd.*, 705
 27 F.3d 1073, 1088 (9th Cir. 2013) (noting a court “cannot say that failure to consider [an]
 28 alternative is improper without evidence showing the feasibility of the alternative”).

1 Lastly, the Court finds FWS did not improperly exclude the north-of-I-40
 2 alternatives by unreasonably narrowing the “purpose and need” for its action. (See Doc.
 3 56 at 47–48.) Plaintiffs assert because the 2018 Remand Order held the 2015 10(j) Rule
 4 as a whole fails to further recovery and expressly questioned the viability of the I-40
 5 boundary, FWS improperly used the purpose and need¹¹ as a pretext to avoid its statutory
 6 obligation to provide for the conservation of Mexican wolves. (*Id.*) While the Court agrees
 7 that “statutory objectives . . . serve as a guide by which to determine the reasonableness”
 8 of a scope of alternatives, *Westlands Water Dist.*, 376 F.3d at 866, the Court finds it
 9 reasonable for FWS to limit its scope to the parts of the rule explicitly identified as
 10 problematic in the 2018 Remand Order. In this scenario, the agency is not writing on a
 11 blank slate and, therefore, it is reasonable to narrow the alternatives to the problems
 12 identified for remand.

13 ***iii. Essentiality Determination***

14 Consolidated Plaintiffs assert FWS failed to take a hard look at or evaluate a
 15 reasonable range of alternatives by excluding the nonessential determination in the SEIS
 16 analysis and thereby failing to conduct an effects analysis of the essentiality determination.
 17 (See Doc. 59 at 43–47.) They contend “[t]his evaluation should have included comparing
 18 and contrasting an essential designation alternative against the nonessential alternative,”
 19 which they believe are both reasonable alternatives. (*Id.* at 47–48.) Because of this,
 20 Plaintiffs assert FWS arbitrarily failed to consider an important aspect of the problem and
 21 violated NEPA’s mandate to consider the environmental effects of its action, which include
 22 effects of Section 4 critical habitat and Section 7 consultation requirements.¹² (See *id.* at
 23

24 ¹¹ As stated in the SEIS, the purpose of FWS’s proposed action was “to ensure
 25 compliance with the [2018 Remand Order].” (FWS027758.) The action “is needed
 26 because the ruling directs [FWS] to redress the following narrowly defined issues”: “the
 27 population size and genetic needs required for long-term persistence of the Mexican wolf;
 28 the relationship between expanded take of Mexican wolves and protecting against the loss
 of genetic diversity; and to make a fresh essentiality determination.” (*Id.*)

27 ¹² Essential experimental populations are treated as threatened and are thereby
 28 protected by the consultation requirements of Section 7 of the ESA, 16 U.S.C. § 1536, and
 qualify for designation of critical habitat under Section 4 of the ESA, 16 U.S.C.
 § 1533(a)(3)(A), whereas nonessential experimental populations generally do not enjoy
 those same protections, *see* 16 U.S.C. § 1539(j)(2)(C).

1 45–49.) In sum, Plaintiffs interpret NEPA as requiring FWS to proceed in its SEIS as if
 2 the population were essential, even though FWS had already found the population was
 3 nonessential according to a specific ESA standard.

4 In response and in their cross-motion, Consolidated Defendants contend FWS’s
 5 essentiality determination, a finding required under the ESA as part of its 10(j) rule, is not
 6 subject to NEPA. (Doc. 78 at 45.) Because FWS was required by the ESA to decide
 7 whether the experimental population is or is not essential, Defendants assert FWS “has no
 8 ability to choose a no-action alternative.” (*Id.*) However, by undertaking an EIS to analyze
 9 environmental impacts of other aspects of the 10(j) rule, Federal Defendants concede an
 10 EIS was required for the 10(j) rule as a whole and, specifically, its management objectives.
 11 Because the rulemaking under Section 10(j) is a major federal action subject to NEPA, and
 12 no party disputes that, the question becomes to what extent FWS can exclude the
 13 essentiality determination underlying the 2022 10(j) Rule from its effects analysis
 14 contained in an EIS, and whether its justification for doing so was reasonable.

15 Although NEPA requires federal agencies to consider the impacts of major federal
 16 actions significantly affecting the environment, “inherent in NEPA and its implementing
 17 regulations is a ‘rule of reason,’ which ensures that agencies determine *whether and to*
 18 *what extent* to prepare an EIS based on the usefulness of any new potential information to
 19 the decisionmaking process.” *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 754 (2004)
 20 (emphasis added). However, because “NEPA places upon an agency the obligation to
 21 consider every significant aspect of the environmental impact of a proposed action, the
 22 considerations made relevant by the substantive statute driving the proposed action must
 23 be addressed in [the] NEPA analysis.” *Or. Nat. Desert Ass’n*, 625 F.3d at 1109 (citation
 24 and internal quotation marks omitted). Therefore, if it is reasonably possible to analyze
 25 the consequences of an agency’s action, the agency is “required to perform that analysis.”
 26 *Kern*, 284 F.3d at 1072. Much of the caselaw in this area cited by the parties deals with
 27 whether an agency must complete an EIS when taking certain actions, not to what extent
 28 its EIS must cover a specific underlying analysis already performed pursuant to another

1 statute.¹³

2 Here, the Court finds it was reasonable for FWS not to analyze the environmental
 3 impacts of an essential designation alternative in the SEIS. Plaintiffs do not cite any study
 4 showing environmental impacts of consultation and critical habitat designation are
 5 quantifiable. Thus, they fail to establish how it would be reasonably possible to analyze
 6 the consequences of FWS's nonessential determination as compared to an essential
 7 determination. *See Kern*, 284 F.3d at 1072. While the Court can appreciate Plaintiffs'
 8 qualitative arguments about the hypothetical benefits of Section 4 critical habitat
 9 designation and Section 7 consultation, it is difficult to envision what FWS's alternative
 10 analysis of an essential designation would involve above and beyond just stating the
 11 additional legal mandates and protections. Therefore, Plaintiffs fail to establish there were
 12 environmental impacts, above and beyond those legal impacts under the ESA, of an
 13 essential alternative. Moreover, Plaintiffs fail to show the "essential" status was a "viable
 14 but unexamined alternative." *Westlands Water Dist.*, 376 F.3d at 868 (emphasis added).
 15 The Court finds no basis in NEPA or the relevant caselaw to conflate legal outcomes
 16 mandated if FWS finds the experimental population "essential" as that term is defined in
 17 the ESA with environmental impacts of that finding. Even assuming there are some
 18 tangible environmental impacts associated with Section 4 and Section 7, Plaintiffs fail to
 19 explain how those impacts would bear a rational relationship to the biological facts
 20 underlying the essentiality determination.

21 Lastly, FWS sufficiently explained why it was eliminating this alternative from
 22 detailed consideration. NEPA does not clearly require FWS to investigate environmental
 23 impacts of the hypothetical consequences of an essential designation under other ESA

24 ¹³ See *Flint Ridge Dev. Co. v. Scenic Rivers Ass'n of Okla.*, 426 U.S. 776, 791 (1976)
 25 (holding Secretary need not prepare an EIS, despite taking a major federal action, when "a
 26 clear and fundamental conflict of statutory duty" exists under another statute); *Douglas
 27 County v. Babbitt*, 48 F.3d 1495, 1502 (9th Cir. 1995) (holding Secretary need not prepare
 28 EIS when designating critical habitat under Section 4(a) because "NEPA does not apply");
San Luis, 747 F.3d at 645 (holding FWS not required to comply with NEPA when issuing
 a BiOp under Section 7 subject to Bureau of Reclamation's adoption, which itself would
 be an action requiring an EIS); *Ramsey v. Kantor*, 96 F.3d 434, 446 (9th Cir. 1996) (holding
 issuance of an incidental take statement under Section 7 of the ESA is not exempt from
 NEPA and, therefore, agency must prepare an EA and possibly an EIS).

1 subsections, in the absence of any direct, measurable environmental impact. Therefore, it
 2 was reasonable for FWS to briefly explain its elimination of this aspect of the rule from its
 3 NEPA analysis. Accordingly, while the specific action at issue here, FWS's decision to
 4 exclude an essential alternative from its analysis in the SEIS of environmental impacts of
 5 the 10(j) rule, appears to be an issue of first impression, the Court finds FWS's decision
 6 does not render its SEIS unreasonable in violation of the APA and NEPA.

7 **c. Judicial Notice**

8 Plaintiffs request this Court take judicial notice pursuant to Federal Rule of
 9 Evidence 201 of two documents pertaining to Plaintiffs' motions for summary judgment:
 10 (1) an excerpt from the Answering Brief for the Federal Appellees in *WildEarth Guardians*,
 11 *et al. v. Haaland, et al.*, Appeal Nos. 22-15029 and 22-15091 (9th Cir. Sept. 23, 2022); and
 12 (2) FWS's Mexican Wolf Recovery Program Progress Report #25 (August 2023). (See
 13 Doc. 86.) Under Federal Rule of Evidence 201, a court may take judicial notice of an
 14 adjudicative fact if it is "not subject to reasonable dispute," including those facts
 15 established by records from other state or federal court proceedings "if those proceedings
 16 have a direct relation to matters at issue." *Trigueros v. Adams*, 658 F.3d 983, 987 (9th Cir.
 17 2011) (quoting *United States ex rel. Robinson Rancheria Citizens Council v. Borneo, Inc.*,
 18 971 F.2d 244, 248 (9th Cir. 1992)). However, because "[i]rrelevant evidence is not
 19 admissible," Fed. R. Evid. 402, courts should decline to take judicial notice of irrelevant
 20 facts, *see, e.g.*, *Turnacliff v. Westly*, 546 F.3d 1113, 1120 n.4 (9th Cir. 2008).

21 Here, the scope of this Court's review is limited to the information available to the
 22 agency at the time of its decision, so the Court does not see how either document is relevant
 23 or material when evaluating whether summary judgment is appropriate under the APA.
 24 Therefore, the Court denies Plaintiffs' request for judicial notice.

25 **V. Conclusion**

26 For the reasons above, Plaintiffs have not shown FWS's decision was arbitrary,
 27 capricious, or not in accordance with law. *See* 5 U.S.C. § 706(2)(A). The administrative
 28 record shows FWS considered numerous model scenarios under the Miller PVA and based

1 its 2022 10(j) Rule on the best available science. None of the purported oversights noted
2 by Plaintiffs render the Rule itself unreasonable. Additionally, FWS took a hard look at
3 the environmental impacts of the 2022 10(j) Rule and considered a reasonable range of
4 alternatives. Because Plaintiffs have not met their burden of demonstrating FWS's ultimate
5 conclusions are unreasonable or were arrived at in an arbitrary manner, the Court will
6 uphold FWS's 2022 10(j) Rule.

7 Accordingly,

8 **IT IS ORDERED** as follows:

9 1) In lead case No. CV-22-00303-TUC-SHR, Plaintiffs' Motion for Summary
10 Judgment (Doc. 55) is **DENIED**. Defendants' Cross-Motions for Summary
11 Judgment (Docs. 63, 67) are **GRANTED**.

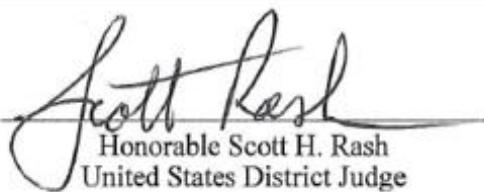
12 2) In consolidated case No. CV-22-00453-TUC-SHR, Plaintiffs' Motion for
13 Summary Judgment (Doc. 58) is **DENIED**. Defendants' Cross-Motions for
14 Summary Judgment (Docs. 77, 81) are **GRANTED**.

15 3) Plaintiffs' Motion for Judicial Notice (Doc. 86) is **DENIED**.

16 4) The underlying agency action is **AFFIRMED**.

17 Dated this 31st day of March, 2025.

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Honorable Scott H. Rash
United States District Judge